

ABSTRACT

Disclosed is a system and method for monitoring the vibration levels of gas turbine engines. The vibration monitoring system acquires vibration data from an engine, and processes the data with advanced algorithms to determine engine component health, both in a diagnostic and prognostic fashion. The method includes the steps of measuring an operating parameter and a corresponding set of vibration amplitudes for a plurality of rotating component during a period of operation and normalizing the set of measured vibration amplitudes based on established amplitude limits. The set of normalized amplitude data points are stored in parameter-based data blocks, which extend over a predetermined range of the operating parameter. For each data block, a time period remaining to reach the established amplitude limits is estimated based on changes in the normalized amplitude data points stored in the data blocks. An alarm setting is then established based on the estimated time period remaining to reach the established amplitude limits for each data block.

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